DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

04/15/08 has been entered.

Response to Arguments

2.   Applicant's arguments filed 04/15/08 have been fully considered but they are not

persuasive.

Applicant argues that neither Gersho nor Honda teach or suggest determining a

zero-phase equalization filter for said frame wherein harmonics which fall into a band

that was determined to have a voicing level below a threshold in step (a) are replaced

for said zero-phase equalization filter (Amendment, pages 3 – 6).

The examiner disagrees, Honda teaches determining a zero-phase equalization

["phase equalizing-analyzing part coefficients of a phase equalizing filter for rendering

the phase characteristic of the speech into a zero phase and reference time points of

phase equalization are computed" (col.4, lines 5 – 9)]. And since Gersho discloses

"switchable adaptive codebook may help at a vowel-consonant transition segment or for

the case of classification error which classifies a harmonic frame as a transition frame"

(col.26, lines 22 – 25); it is obvious to replace harmonics when the voicing level is below

a threshold, because that would eliminate errors that occur due to harmonic frame that

is classified as transition frame.

Claim Rejections - 35 USC § 103

3.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

   4. Claims 1, and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over

   Gersho et al., (US Patent 6,233,550), in view of Honda (US Patent 5,495,556).

       As per claim 1, Gersho et al., teach a method of speech encoding, comprising:

       determining bandpass voicing levels for each of a plurality of bands for a frame of

speech ("for every frame, a speech classifier module classifies the speech as stationary

unvoiced, steady state or transition speech"; col.13, lines 22 – 25; figs 1A, and 1B

col.18, lines 17 - 21).

       However Gersho et al., do not specifically disclose determining a zero-phase

equalization filter for said frame; and that harmonic which fall into a band that was

determined to have a voicing level below a threshold are replaced for said zero-phase

equalization filter.

       Honda teaches that in the phase equalizing-analyzing part coefficients of a phase

equalizing filter for rendering the phase characteristic of the speech into a zero phase

and reference time points of phase equalization are computed (col.4, lines 5 – 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to render the phase characteristic of the speech into a zero phase as taught by Honda in Gersho et al., because that would help classify the speech signal.

Gersho et al., in view of Honda do not specifically teach that harmonic which fall into a band that was determined to have a voicing level below a threshold are replaced for said zero-phase equalization filter.

However, since Gersho et al., disclose a switchable adaptive codebook may help at a vowel-consonant transition segment or for the case of classification error which classifies a harmonic frame as a transition frame (col.26, lines 22 – 25). One having ordinary skill in the art at the time the invention was made would have found it obvious to replace harmonics when the voicing level is below a threshold, because that would increase the coding robustness to classification errors (col.15, lines 30, and 31).

As per claim 2, Gersho et al., further disclose determining bandpass voicing of step (a) uses the frequency bands 0-500 Hz, 500-1000 Hz, 1000-2000 Hz, 2000-3000 Hz, and 3000-4000 Hz (see figures; figs 1A, and 1B).

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard Saint-Cyr whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone

number for the organization where this application or proceeding is assigned is (571)-

273-8300.

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LS
06/05/08
/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626